AMENDMENTS TO THE DRAWINGS

Fig. 5 is submitted herewith for addition to the specification as a cross-sectional view of a capacitor 1 produced in accordance with the method of the invention, including electric conductor 2, dielectric layer 3 and semiconductor layer 4. The enlarged view shows feather-shaped fine protrusions 5 and other fine protrusions 6 formed on the dielectric layer 3. This drawing is submitted pursuant to 37 C.F.R. § 1.83 and the Examiner's request for a drawing which illustrates the features of the invention as specified in the claims. No new matter has been added.

Attachment: New Sheet (Fig. 5)

REMARKS

Claim 20 has been amended to delete "said fine protrusions are not in the form of a layer" and to more clearly characterize the feather-shaped fine protrusions as "discrete feather-shaped fine protrusions formed on a part of but less than the entire surface of the dielectric layer before energization". Similarly, claim 21 has been amended to delete "said fine protrusions are not in the form of a layer," and to more clearly characterize the fine protrusions as being discrete fine protrusions formed on a part of but less than the entire surface of the dielectric layer before energization. The claim amendments are supported by Figs. 1 and 2 which show the fine protrusions (including feather-shaped fine protrusions) formed on a part of but less than the entire surface of the dielectric layer; at page 12, lines 10-14 (if the material for forming fine protrusions covers the entire surface of the dielectric layer and forms a layer, the ESR value of the capacitor produced becomes high and this is not preferred); at page 12, lines 27-page 14, line 16 (description of the fine protrusions, including protrusion width, number of protrusions formed per unit area of the dielectric layer, and the description of Figs. 1 and 2). New claims 26 and 27 find support at page 13, lines 4-12 of the specification.

In response to the objection, Applicant submits herewith Fig. 5 for addition to the specification showing a capacitor 1 produced in accordance with the method of the invention including the features of, as one electrode, an electric conductor 2 having formed on the surface thereof a dielectric layer 3 and, as the other part electrode, a semiconductor layer 4 on the electric conductor. The enlarged (expanded) view shows feather-shaped fine protrusions 5 and other fine protrusions 6 formed on the dielectric layer 3. The specification has also been

amended to include a description of the drawing (Fig. 5). This drawing is submitted pursuant to 37 C.F.R. § 1.83. No new matter has been added.

Withdrawal of the objection is respectfully requested.

The Examiner objected to claims 20 and 21. Particularly, the Examiner considered that the limitation "said protrusions are not in the form of a layer" to be unclear because any protrusion having a dimension is in the form of a layer, irregardless of whether it is continuous or non-continuous.

In response, claims 20 and 21 have been amended to delete said protrusions are not in the form of a layer." Withdrawal of the objection is respectfully requested.

Claims 5-21 and 23-25 were rejected under 35 U.S.C. § 102(b) as being anticipated by JP 02-066922, namely, the X reference cited in the ISR.

Applicant responds as follows.

JP '922 relates to a method for producing a solid electrolytic capacitor and teaches:

- forming a chemical forming film for an anode (corresponding to a dielectric layer of the present invention) on the surface of an anode body (corresponding to a conductor of the present invention);

- depositing a semiconductor in the form of a continuous layer or as islands overall on the part of the chemical forming film from which a cathode is taken out; and

- forming a conductive polymer film on the chemical forming film by electrolytic polymerization using an electrode placed in contact with the semiconductor (see claims and Fig. 1 of JP '922).

While JP '922 uses an electrode exclusively for electrolytic polymerization, which electrode is placed in contact with a conductor, the present invention uses a conductor (corresponding to the anode body of JP '922) as an electrode in the electrolytic polymerization (present claims 20 and 21), and the two inventions differ in this respect.

Further, in JP '922, it is necessary to bring the electrode for electrolytic polymerization in contact with the semiconductor and its contact area is "0.2 mm^2 or less" (at page 3, upper right column, lines 16 to 19 of JP '922). When a semiconductor is formed in the form of islands, the size of the semiconductor in the form of islands cannot be smaller than the contact area as set forth above: i.e., a size of a few millimeters or a few hundred micrometers. In comparison, the fine protrusions of the present invention have a size of a few nanometers, which is smaller by three orders of magnitude than the conductor in the form of islands of JP '922.

Since the contact area in JP '922 is defined as 0.2 mm^2 or less, it literally includes an area smaller than 0.2 mm^2. However, since the semiconductor layer must be in contact with the electrode, a certain size of the island-shape semiconductor layer is required at least so as to confirm contact with the electrode. That is, a contact area on the order of a few nanometers in the present invention is out of the expected range in JP '922.

Since a conductor (corresponding to the anode body in JP '922) is used as an electrode in electrolytic polymerization in the present invention as mentioned above, the fine protrusions need not be in contact with the electrode and they retain sufficient function in a size of a few nanometers.

Thus, the present invention and JP '922 are completely different in terms of the size of the island-shaped protrusion.

Also, the present invention suppresses a rise in the electric resistance generated due to the presence of protrusions. This is because the protrusions are very fine and in a size of a few nanometers. The fine protrusions can be formed inside the fine pores of a conductor and do not prevent impregnation of conductive polymer into the fine pores (see page 14, line 28 to page 15, line 3 of the present specification). In comparison, since the island-shaped semiconductor of JP '922 has a size of a few millimeters or a few hundred micrometers needed to make contact, this results in a great increase in electric resistance. Furthermore, the island-shaped semiconductor is highly likely to be formed in a way to close the aperture of the fine pores so that the capacitance becomes inferior to that of the capacitor of the present invention.

For the above reasons, and more specifically because JP '922 fails to disclose the fine protrusions of claims 20 and 21 having a width of about 0.1 to about 120 nm or a width of 0.1 to about 60 nm, the present claims are not anticipated by JP '922 and withdrawal of the foregoing rejection under 35 U.S.C. § 102(b) is respectfully requested.

Claims 21, 5-9, 14-19, 23 and 24 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,943,892 to Tsuchiya et al. Claims 10, 11, 12 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya et al in view of U.S. Patent No. 4,724,053 to Jasne. Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya et al in view of U.S. Patent No. 3,299,325 to Wagener. Claims 20, 5-9, 14-19 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya

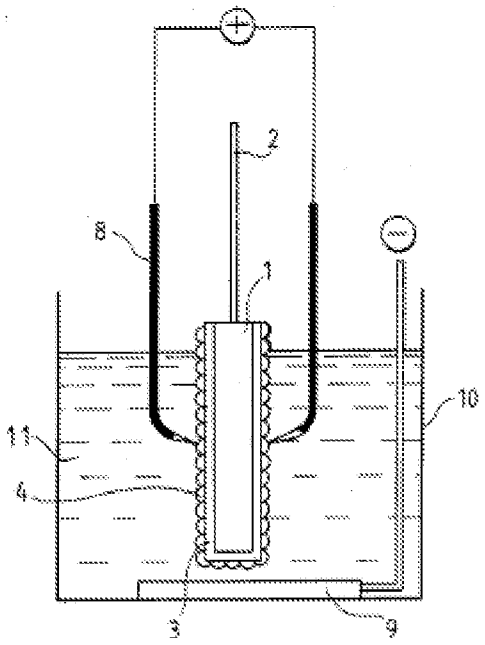
et al. Claims 10, 11, 12 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya et al in view of Jasne. Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuchiya et al in view of Wagener.

Although acknowledging that Tsuchiya et al fails to teach fine protrusions having a width of about 0.1 to 120 nm and a height of about 0.1 to about 600 nm, the Examiner considered that it would have been obvious to form the protrusions of Tsuchiya et al within the claimed dimensional ranges through routine experimentation, and that it would have been obvious to form feather-shaped protrusions in the absence of evidence to the effect that shape is significant (claim 20).

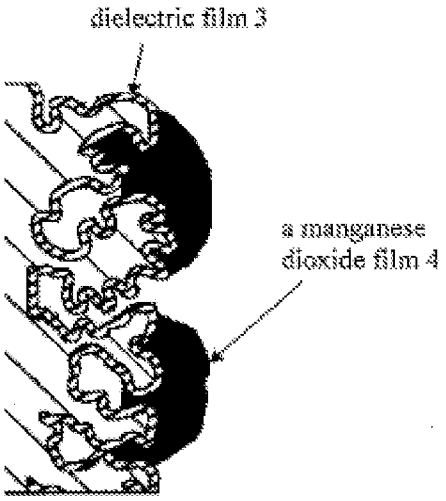
As to claim 21, because of use of the alternative language "or," the Examiner did not consider the fine protrusions which overlay an outer surface of the dielectric layer to be limited to a width of 0.1 to 60 mm.

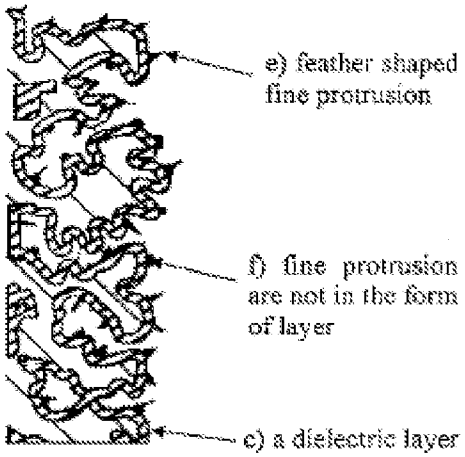
Applicant responds as follows.

In his Rule 132 Declaration filed May 7, 2009, Mr. Naito reproduced the procedure of Tsuchiya et al, but found that "fine protrusions of a nanometer scale were not formed." Also, Mr. Naito pointed out that the manganese dioxide islands or spots of Tsuchiya et al must be large enough for allow for contact with electrode 8 as shown in Fig. 3 of Tsuchiya et al so as to allow polymerization to proceed. In that case, the islands or spots also could not be of a nanometer scale. Fig. 3 of Tsuchiya et al is reproduced below.



Regarding this last point, Applicant shows in the rendered drawing below what the manganese dioxide islands or spots of Tsuchiya et al might look like so as to be large enough to allow for contact with the electrode. This may be compared with the fine protrusions of nanometer scale as shown in the expanded view of the dielectric layer of Fig. 5 submitted herewith. These are shown in side-by-side comparison below.





Tsuchiya et al Invention

The size of the "manganese dioxide film 4" in Fig. 3 of Tsuchiya et al is greatly enlarged as compared to the size shown in the above rendered view of Tsuchiya et al. The important point, however, is that the islands or spots of manganese dioxide must be large enough to confirm contact with the electrode 8.

As provided in the Rule 132 Declaration of Mr. Naito, neither of "manganese dioxide film" as in the rendered view of Tsuchiya et al nor fine protrusions of the present invention is formed according to the conditions described in the Examples of Tsuchiya et al. Although conditions other than those described in Tsuchiya et al might be required to perform a manganese nitrate layer, such conditions are unknown because Tsuchiya et al neither describes nor suggests such conditions.

The Examiner considered that it would have been obvious to form the islands or spots of manganese dioxide of Tsuchiya et al within the claimed dimensional ranges through routine

experimentation. Applicant respectfully disagrees. Because the islands or spots of Tsuchiya et al must be large enough to allow for contact with electrode 8, one of ordinary skill would not contemplate reducing the size of the islands or spots to be of a nanometer scale as required by the present claims. In this regard, the present specification bridging pages 14-15 describes that the protrusion is fine (i.e., on the order of nanometers in scale) and therefore the electric resistance increases less due to their presence. Further, since the protrusion is fine, impregnation of the semiconductor is not inhibited. These aspects of the invention also are not taught or suggested by Tsuchiya et al.

Claims 20 and 21 have been amended to recite "where discrete fine protrusions are formed on a part of but less than the entire surface of the dielectric layer" to further distinguish over Tsuchiya et al where the manganese dioxide islands or spots are shown in Fig. 3 as covering essentially the entire surface of anodized film 3 (so as to allow electrode 8 to contact the manganese dioxide film 4).

As discussed above, fine protrusions as defined in the present claims are not disclosed or otherwise illustrated in Tsuchiya et al and are not formed as a result of reproducing the procedure of Tsuchiya et al (Mr. Naito's Rule 132 Declaration filed May 7, 2009). Accordingly, Tsuchiya et al neither describes nor suggests the fine protrusions of the present invention, and the fine protrusions cannot be formed through routine experimentation as suggested by the Examiner.

Withdrawal of the foregoing rejection is respectfully requested.

Withdrawal of all rejections and allowance of claims 5-21 and 23-27 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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